



## New and Improved Number Club and Strategy Club

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**I**N A JANUARY 2005 *TOMT* article, both Number Club and Strategy Club were introduced. These math clubs are programs to help students develop number sense and computation strategies by working through a series of worksheets along a developmental continuum of skills and strategies. Later in this article we will look in depth at each club and give you a link where you can go to download the worksheets. Feedback from K-2 classroom teachers has been positive and a great source of ideas for improvement. Based on teacher feedback, we've reorganized and greatly expanded the original club concept.

In the 2007-08 school year, teachers will have access to Basic Number Club (formerly called Number Club), a brand-new Advanced Number Club, and a greatly expanded Addition-Subtraction Basic Facts Club (formerly called Strategy Club). We have also added these additional clubs: Multi-digit Addition-Subtraction Strategy Club, and Multiplication-Division Basic Facts Club. We are working to add an Advanced Multiplication-Division Strategy Club sometime in the near future.

There are many ways to implement the club program. We would like to suggest a few possibilities:

### 1. Whole class

One way is to use this program as a part of your regular classroom math instruction or even as a mini-lesson to introduce a new topic. For example, in Gail's kindergarten class at Adams Elementary School in Corvallis, starting in January, all students began with the first Number Club sheet, Tracing Numbers 1-30. As students successfully complete each club, they are given the number grid for the next club. One easy way to manage this activity is to prepare folders of blank number grids for each club and an "active folder" for the papers students are currently working on. When it's time to do Number Club, just pass out the "active" papers students are currently working on, including a fresh paper in the next club for anyone who has successfully completed the last club.

As students complete a club, the teacher can quickly correct the paper by erasing any errors if a paper has just a few mistakes. The student can easily correct these errors. However, a "do-over" may be necessary for a paper with extensive mistakes (just give the student a clean copy of the club paper). It's helpful to meet informally with students who need to make corrections or obviously need help during the club sessions. A class-recording sheet is available to track student progress through the clubs; some teachers post charts showing student progress through the clubs. This is a popular program with students who love moving through the clubs and with teachers who have an easy and structured way for students to practice math strategies.

## 2. Enrichment “Math at Home”

At Jackie’s school, West Gresham Grade School, all the primary teachers met together in September to decide how to implement the club program. We had a few considerations that influenced our decision. We work in a district that strongly encourages the use of district adopted math curriculum materials, so we felt it would be best not to attempt to supplement our regular classroom instruction with the club materials. Also, our school already has an optional reading program in place for our students called Read at Home. We have boxes of books set up on book carts in the library. They are arranged by developmental reading levels. Students who choose to participate in this program come down each morning before school to check out a book to take home in their Read At Home envelopes. We liked the idea of having a similar program that encouraged and highlighted the importance of math for our students and their families. We decided to model our new program after the Read At Home program and call it Math At Home.

To launch our Math At Home program, we used the time from September to early November to get to know our students and do mat assessments so we could determine which club to start them with. We invited each family to participate and handed out permission letters as part of our November conferences. During the year, as students completed clubs and begged for more, we began to put together materials that are being incorporated into what is now the Advanced Number Club and Addition-Subtraction Strategy Club. Our intermediate students made a request to participate in the is program, too so as soon as the Multiplication Division Basic Facts club was available, our third grade students began to participate, too. As mentioned above, over the 2008 summer we will create the Advanced Multiplication and Division Strategies Club so Fall of 2008 will see our intermediate students joining in.

Recognizing student success worked well with our school’s every Wednesday whole school Flag Assembly. At these assemblies, we passed out certificates to students who completed various levels of the clubs. Each grade level also set a goal that they would like to see their students accomplish by the end of the year. At our last Flag Assembly we had a math celebration. Students who had met their grade level goal were named the Mathletes of the Year. The Mathletes all wore hachi maki (cloth strips tied around the head like sweatbands) that had been decorated with patterns of math symbols. Once all the Mathletes were announced and handed special certificates, they led the school in a math cheer. Then it was announced that designated Mathletes were handing out class sets of stickers to each classroom teacher to celebrate all the great math learning that had been happening school-wide since the beginning of the year. The stickers said, “Learn math and you can do anything.”

## 3. RTI for targeted students

The Individuals With Disabilities Education Improvement Act of 2004 (IDEA; P.L. 108 – 446) permits educators to use responsiveness-to-intervention (RTI) as a substitute for, or supplement to, IQ achievement discrepancy to identify students with learning disabilities (LD). Policymakers have high hopes that RTI will encourage and guide practitioners to intervene earlier on behalf of a greater number of children at risk for school failure. At the elementary level most interventions have focused around students with reading difficulties. However, there is also a need to introduce materials that assist students who are not making expected gains in meeting grade level mathematics expectations. Many schools are now choosing to look at ways to

supplement mathematics instruction in the elementary grades while the discrepancies in the achievement gap are still small. The club materials could easily be used for groups of targeted students. At West Gresham, intermediate teachers were using the club materials with students who were struggling with grade level math concepts.

#### 4. Non-school settings

Parents, home-schoolers, child-care providers, or any adult who would like to do some math with children can also use this program. Since the club papers have been posted on-line, we sometimes receive feedback from the public (especially if there is a mistake or we move our website!). Here's a part of a note we received from a college student in Washington DC: "I loved doing the Number Club last summer with my 'little sister' (we are in the Big Brother-Big Sister mentoring program). I would like to do the Strategy Club with her this summer, but I can't find the worksheets for it on your website...These are such a great resource and have made a big difference in my Little Sister's life. (Her self esteem skyrocketed, and she saw that consistent, hard work pays off--her prize for attaining Club "Membership" was a stuffed bear of her choice. This year the Strategy Club Membership prize was going to be those roller skate sneakers.) Also they really help people like me who are not educators by training, and have little time for lesson planning, but who want to help a young person improve their math skills."

#### 5. Math Coaches

Math Coaches could use these materials as they work with staffs to help foster an understanding of alternative solution strategies. Teachers could study the multiple approaches students might use to solve computations as a way to recognize and label what students are doing as they show up naturally in classroom discussions.

#### A brief description of the clubs

##### Number Club

As students travel through Number Club, they get practice in numeral writing and seeing the patterns in our decimal number system. Students practice writing numbers to 200, work with hundreds charts to identify patterns of numbers, and skip count by 2s, 5s, and 10s. This club is typically recommended for use with kindergartners and first graders. The worksheets included in this club are listed in order below: Tracing numbers 1 - 30, Writing numbers 1 - 30, Writing numbers 1 - 50, Writing numbers 1 - 75, Writing numbers 1 - 100, Missing Numbers 100 chart, Missing Even Numbers 1 - 100, Missing Odd Numbers 1 - 100, Writing numbers backwards 100 - 1, Writing numbers 101 - 200, Counting by 2s, Counting by 10s, and Counting by 5s

##### Advanced Number Club

The new club focuses on advanced skip counting skills, number comparisons, number sequences, and place value. In this club, students will explore the relationships between and among numbers greater than 100. This club is typically recommended for use with second and third graders. Worksheets included in this club are listed in order below: Identifying Even and Odd Numbers, Hundreds Charts with Coloring Directions, Counting by Threes on the Number Line, Counting by Sixes Dot-to-Dot, Counting by Sevens on a Hundreds Grid, Counting by Tens on Crazy Grid, Counting Backwards by Tens in a Grid, Counting by Twenty-fives on a Number Line,

Count Backwards from 10,000, Greater Than, Less Than Number Clues, Extending Number Sequences, Missing Elements in Number Sequences, Number Sequences — What's the Rule?, Advanced Number Sequences, Place Value 2 Digit, Place Value 3 Digit, Beginning Arrow Math, Arrow Math: What's the Rule? and Fractured Hundreds Chart Pieces.

#### Addition-Subtraction Facts Club:

This club's worksheets introduce students to addition and subtraction facts in a methodical way along a developmental continuum of increasingly more difficult strategies. The exciting news for students is how the use of strategies pares down the number of facts to memorize (only 10 different addition facts!). "Strategy Find and Solve" pages group a couple of strategies together on one page; students are encouraged to go back and solve the remaining problems on the page. This club is typically recommended for use with first and second graders. Strategy Club topics are listed below: Adding Zero, Subtracting Zero, Counting On: Addition Strategy, Counting Back: Subtraction Strategy, Doubles: Addition Strategy, Neighbors: Addition Strategy, Minus Doubles: Subtraction Strategies, Minus Half: Subtraction Strategy, Combinations of Ten: Addition Strategy, Combinations of Ten: Subtraction Strategy, Adding Nines and Tens, Subtracting Nines and Tens, Addition Facts Chart with coloring directions, Subtraction Facts Chart with coloring directions, Leftover Addition Facts, Leftover Subtraction Facts, Mixed Addition Practice: Adding Zero and Counting On, Mixed Addition Practice: Double and Neighbors, Mixed Addition Practice: Adding Tens and Nines, Mixed Subtraction Practice: Minus Zero and Counting Back, Mixed Subtraction Practice: Minus Half and Neighbors, Mixed Subtraction Practice: Minus Double and Runaway Ones, Mixed Subtraction Practice: Minus Tens and Nines.

#### Multi-Digit Addition and Subtraction Club

This club's worksheets introduce students to strategies for solving multi-digit addition and subtraction problems. All the strategies depend on an understanding of place value and build on the strategies mastered in the previous Addition-Subtraction Facts Club. New concepts introduced include using strings of related facts, constant difference concept for subtraction, and swapping for addition. Rounding out the club papers are 4 challenging puzzles. This club is typically recommended for use with second and third graders. Contents of this club included: Easy Ones, Runaway Ones, Counting Up and Down, Counting Up by Tens and Hundreds, Counting Down by Tens and Hundreds, Adding Nines, Subtracting Nines, Adding On vs. Removing, Hidden Sticks and Dots, Splitting Addition, Splitting Subtraction, Jumps of Ten Addition, Jumps of Ten Subtraction, Friendly Numbers Addition, Friendly Numbers Subtraction, Doubles and Near Doubles, Strings of Related Facts, Constant Difference, Swapping, Mixed Up Digits, Missing Digit Puzzle #1, Missing Digit Puzzle #2, and Letter Math.

#### Multiplication-Division Facts Club

This club's worksheets introduce students to multiplication and division facts in a methodical way along a developmental continuum of increasingly more difficult

strategies. The multiplication fact families are, in order: zeros, identity, doubles, decades, clock, doubles plus one, double-doubles, clocks plus one, double-double-doubles, decades minus one, and triple then double. Division facts clubs are integrated with the related multiplication facts and use related strategies (often in reverse) to accentuate the relation between multiplication and division facts. By coloring in a multiplication-division facts chart, students discover patterns. Mixed practice pages group related “strategy families” on one page. This club is typically recommended for use with second and third graders. Contents include:

Zero Times (x 0)  
One Times (x 1)  
Divide by One ( $\div 1$ )  
Double Facts (x 2)  
Halves ( $\div 2$ )  
Decade Facts (x 10)  
Division Decades ( $\div 10$ )  
Clock Facts (x 5)  
Half-Decades (x 5)  
Clock Division ( $\div 5$ )  
Doubles Plus One (x 3)  
Division Threes ( $\div 3$ )  
Double-Doubles (x 4)  
Half-Halves ( $\div 4$ )  
Clock Plus One (x 6)  
Triple then Double (x 6)  
Half then Divide by 3 ( $\div 6$ )  
Double, Double, Double (x 8)  
Half, Half, Half ( $\div 8$ )  
Decades Minus One (x 9)  
Digits Sum Trick for Nine (x 9)  
Divide by Three Twice ( $\div 9$ )  
Clock Plus Doubles (x 7)  
Multiplication Facts chart  
Multiplication chart coloring directions  
Division Facts chart  
Decade Family Times Mixed Practice (x 0,1,9,10)  
Doubles Family Times Mixed practice (x2, 3, 4, 8)  
Clock Family Times Mixed practice (x5, 6, 7)  
Decade Family Division Mixed Practice ( $\div 1, 9, 10$ )  
Doubles Family Division Mixed Practice ( $\div 2, 3, 4, 8$ )  
Clock Family Division Mixed Practice ( $\div 5, 6, 7$ )

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Follow the link from the OCTM website:  
[http:// www.octm.org/TOMT.html](http://www.octm.org/TOMT.html).

or go directly to the SEPS site at:  
<http://www.seps.org/mathcurriculum/programs>

Once you are at the SEPS site, get a copy of each club worksheet by clicking on the links at the left.

Are you ready to join the club?

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